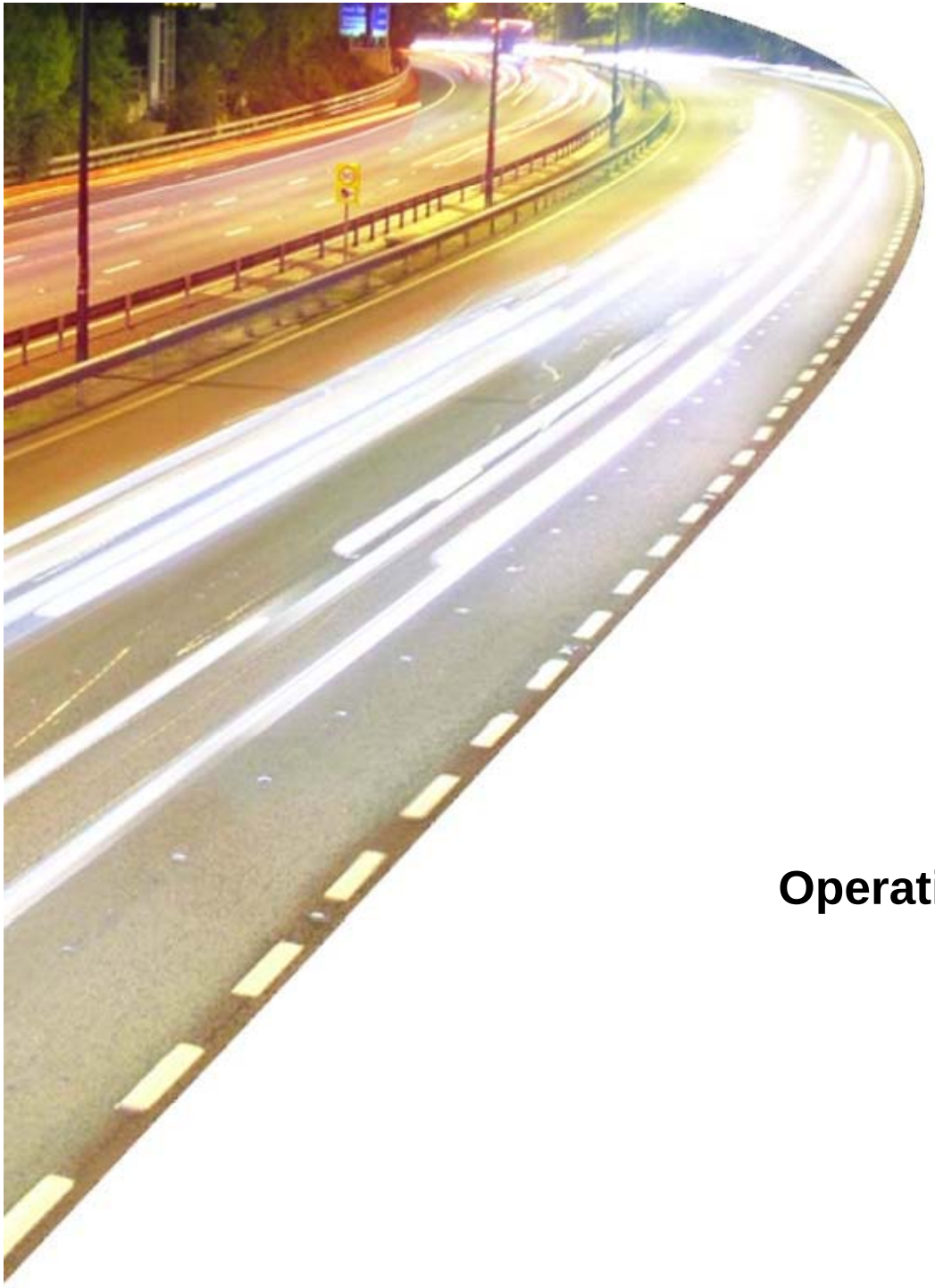
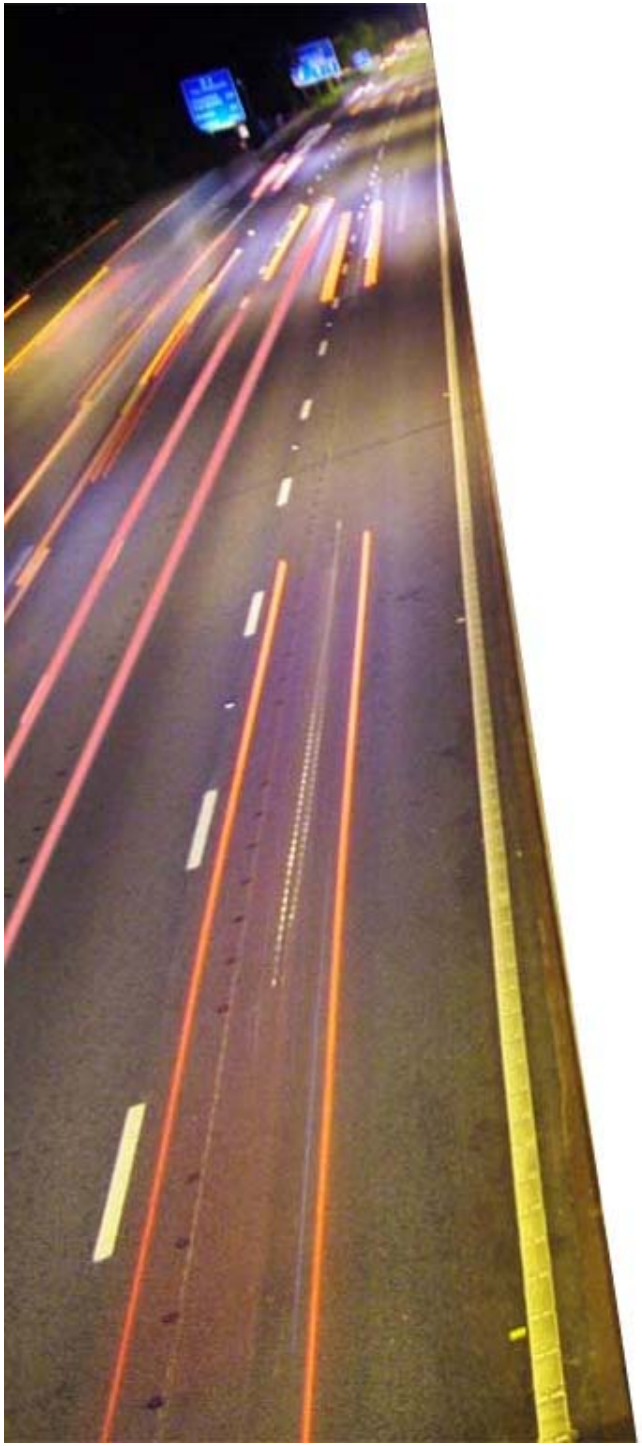


Traffic Control Signals

Operations Committee Presentation
May 14, 2012

Greater Grand Sudbury



Function of Traffic Control Signals

- The function of a traffic control signal is to alternate right-of-way between conflicting streams of traffic (both vehicular and pedestrian), with maximum safety and efficiency.
- They are a control device rather than a safety device.

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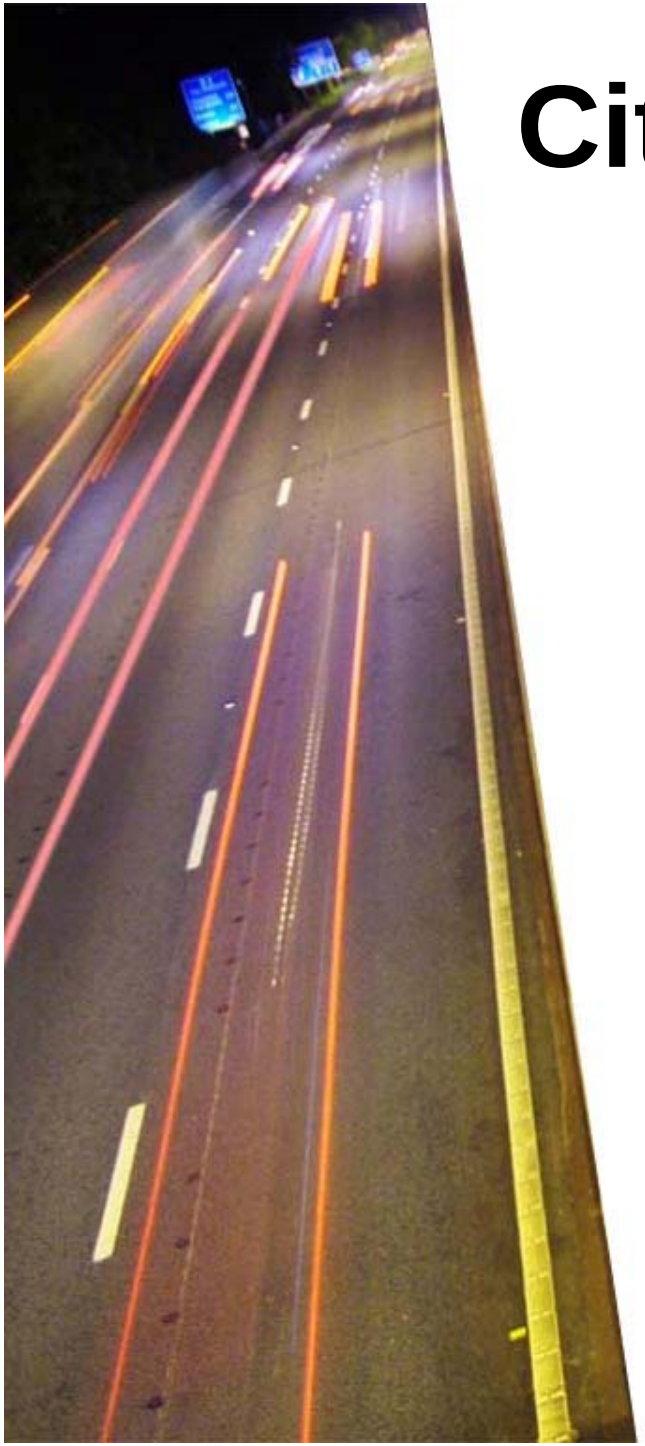
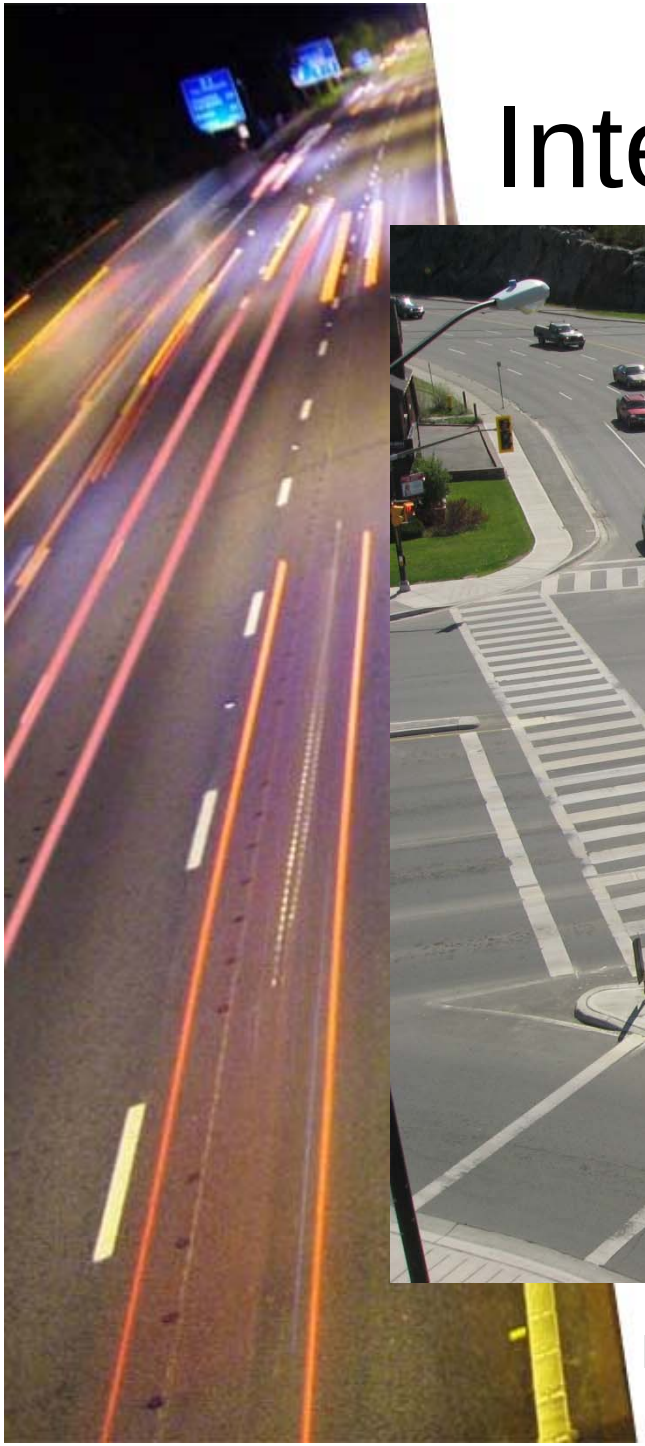


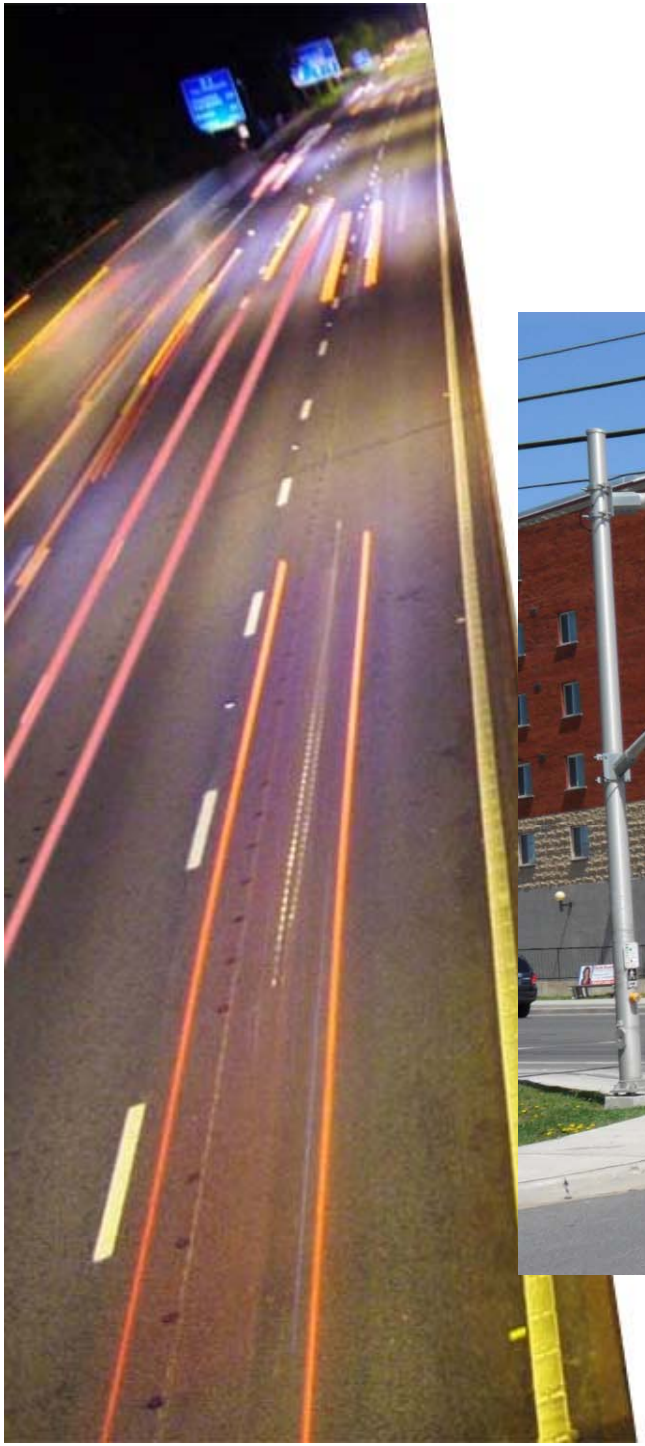
City of Greater Sudbury

- The City currently operates and maintains 117 sets of traffic control signals.
- 5 locations are mid-block or intersection pedestrian signals
- The City also operates flashing beacons at 26 locations.

Intersection Traffic Signal



Intersection of Paris and Brady Streets



Intersection Pedestrian Signal

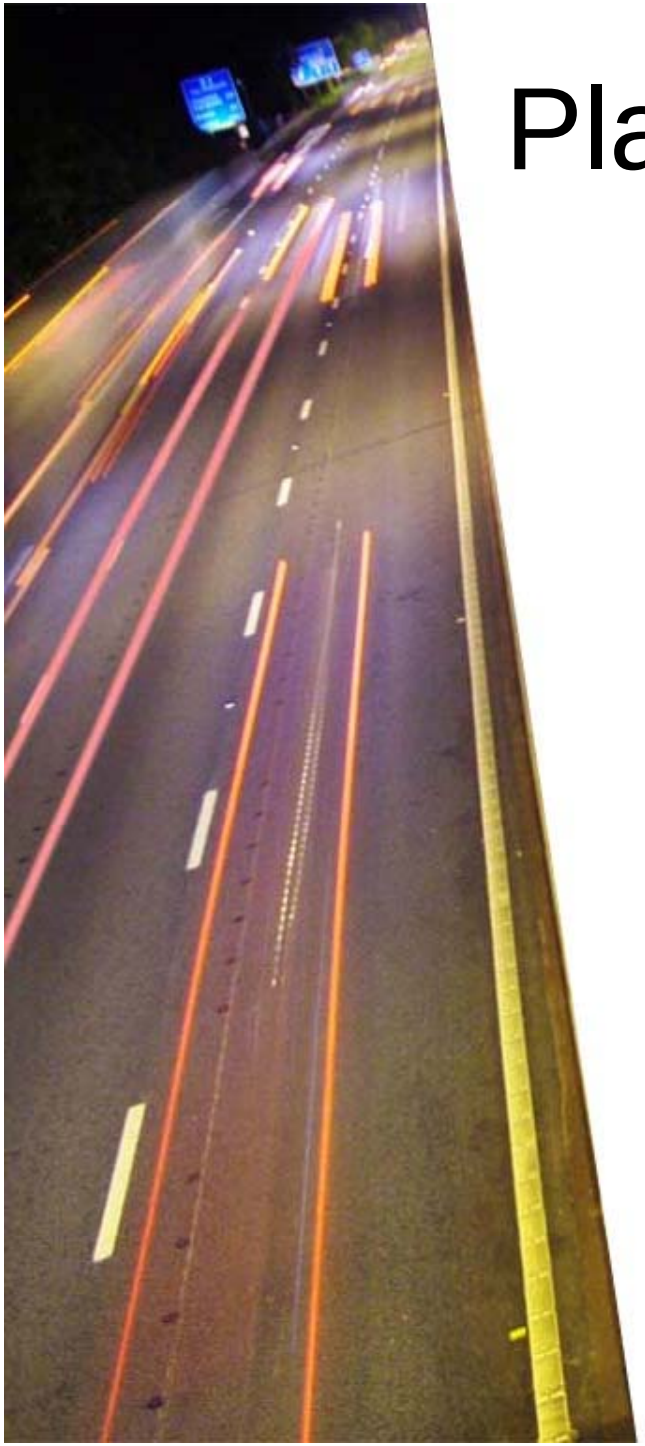
Paris Street at
Southwind Retirement Residence

Greater Grand Sudbury

Overhead Flashing Red Beacon

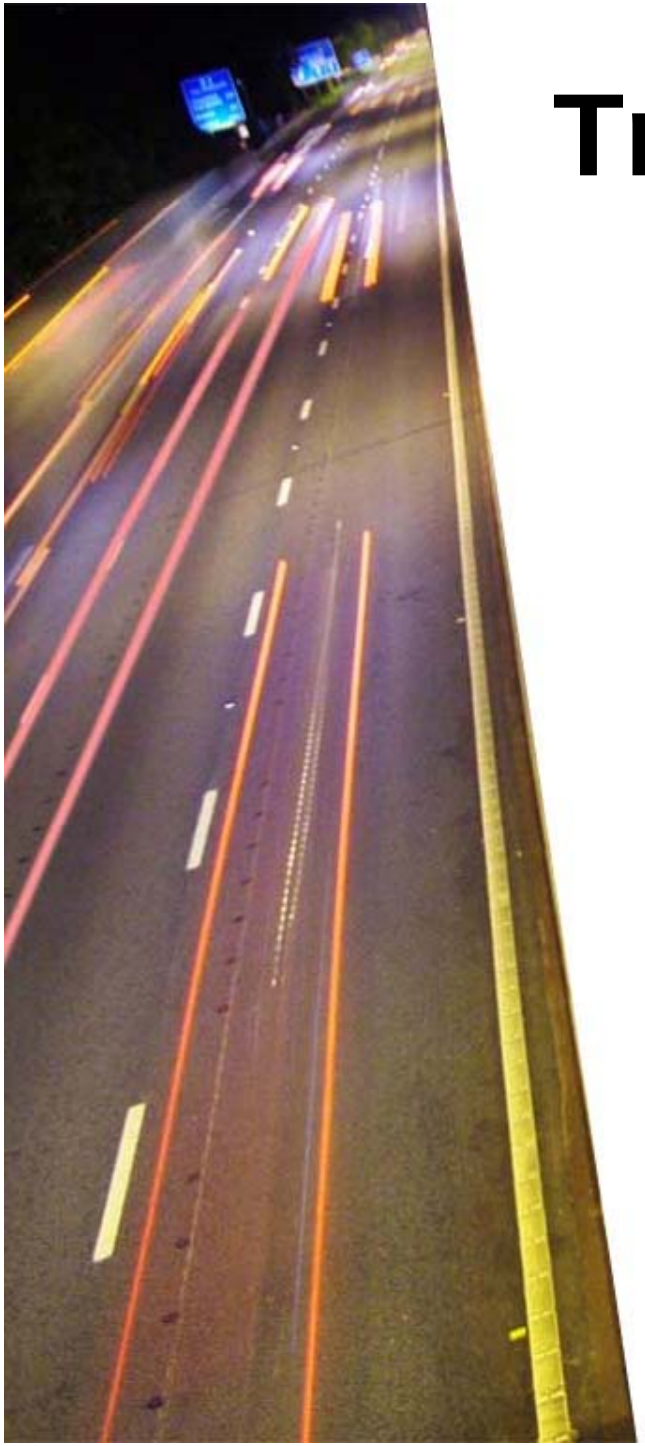
Intersection of Cedar and Elgin Streets

Greater Grand Sudbury



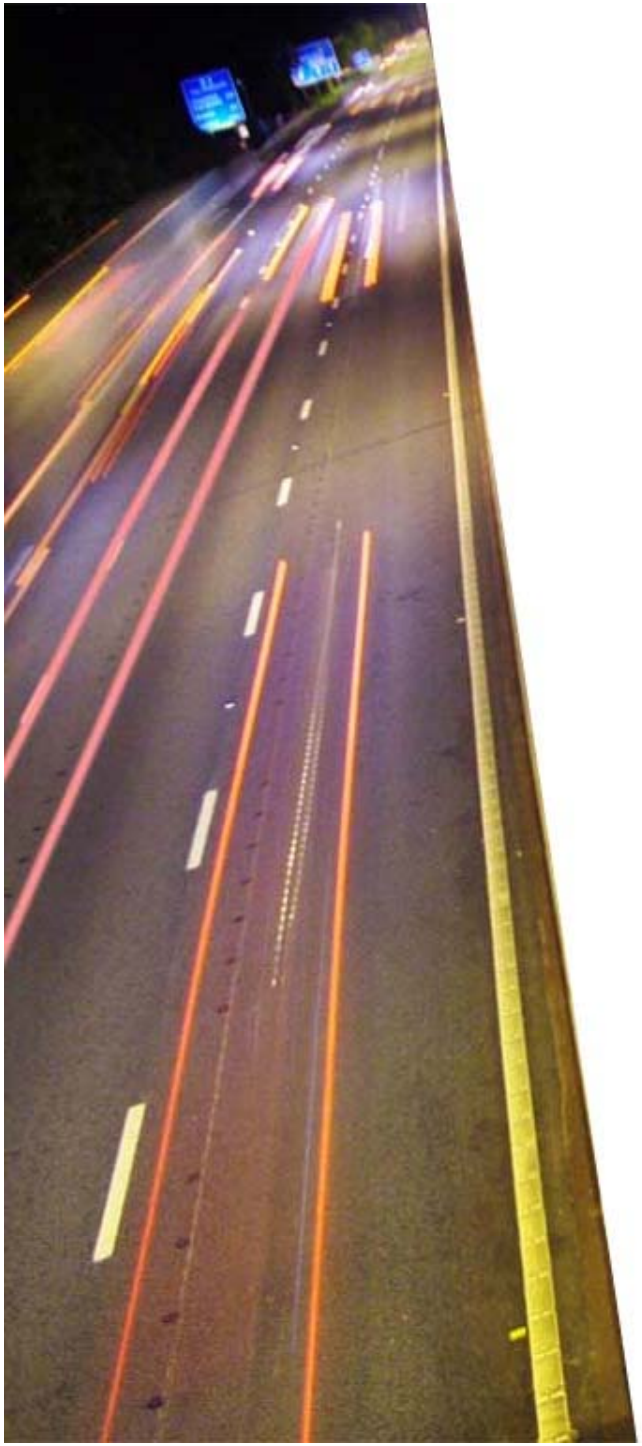
Planning and Justification

- New traffic signals can cost over $200,000 to install.
- Existing traffic signals cost approximately $5,000 each annually to maintain.
- The City follows the warrants contained on the Ontario Traffic Manual to determine the need for traffic signals



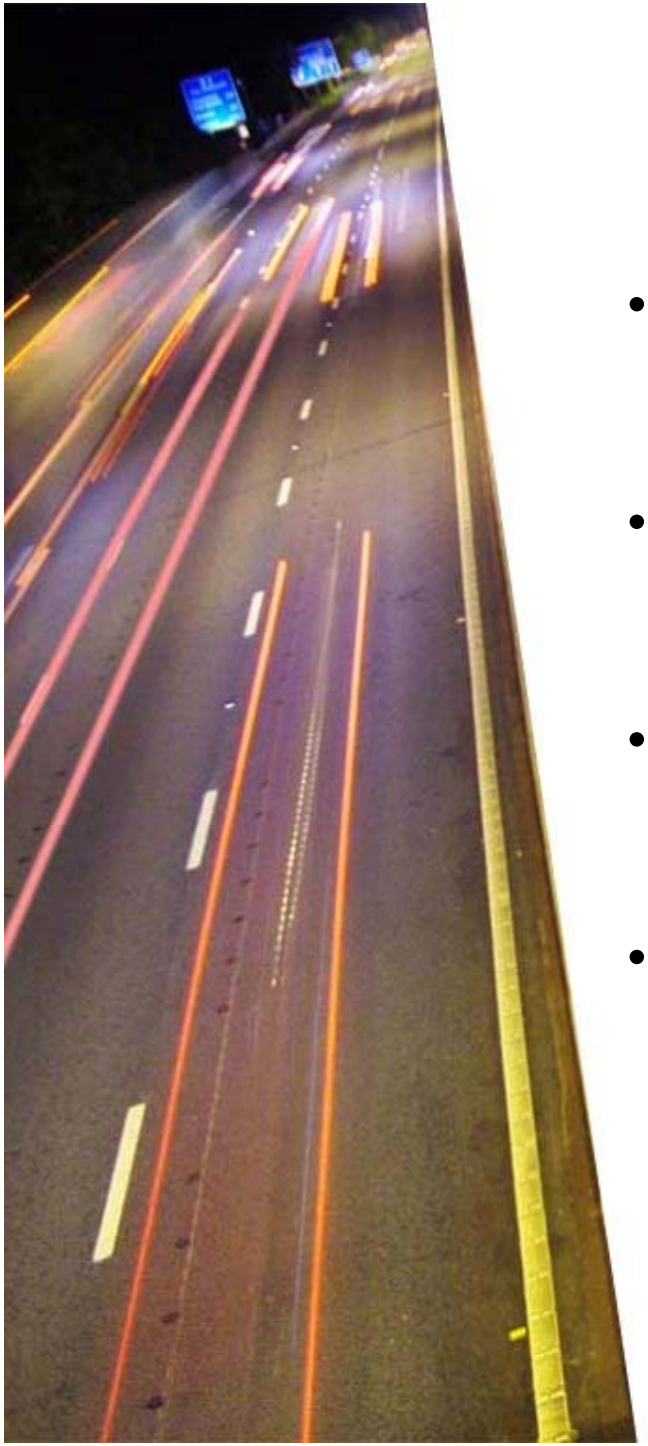
Traffic Signal Warrants

- Based on a number of factors including:
  - Vehicle and pedestrian volumes
  - Roadway speed
  - Intersection geometry
  - Collision data
- Vehicle and pedestrian volumes for the 8 highest hours are considered.



Unjustified Signals

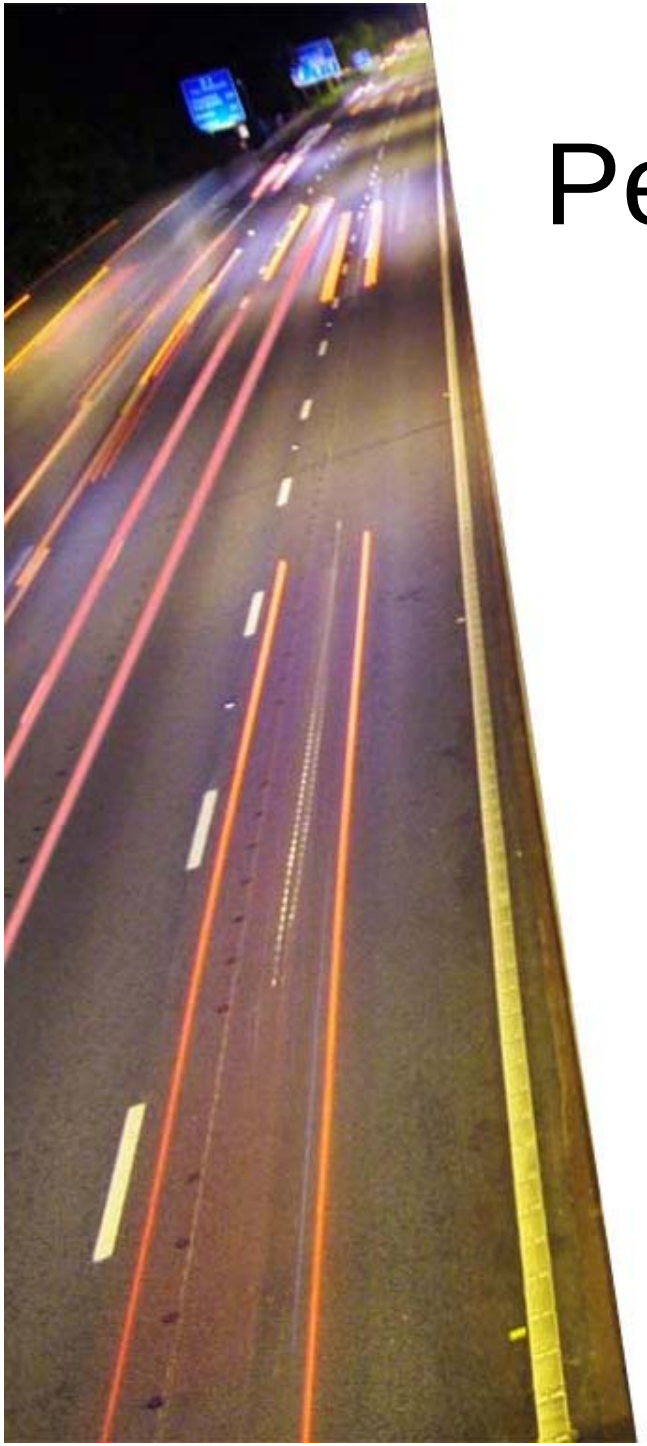
- Result in excessive delay
- Increase fuel consumption
- Increased air and noise pollution
- Increased driver frustration
- Greater disobedience of signals
- Increased use of alternate routes
- Can increase collision frequency



Justification

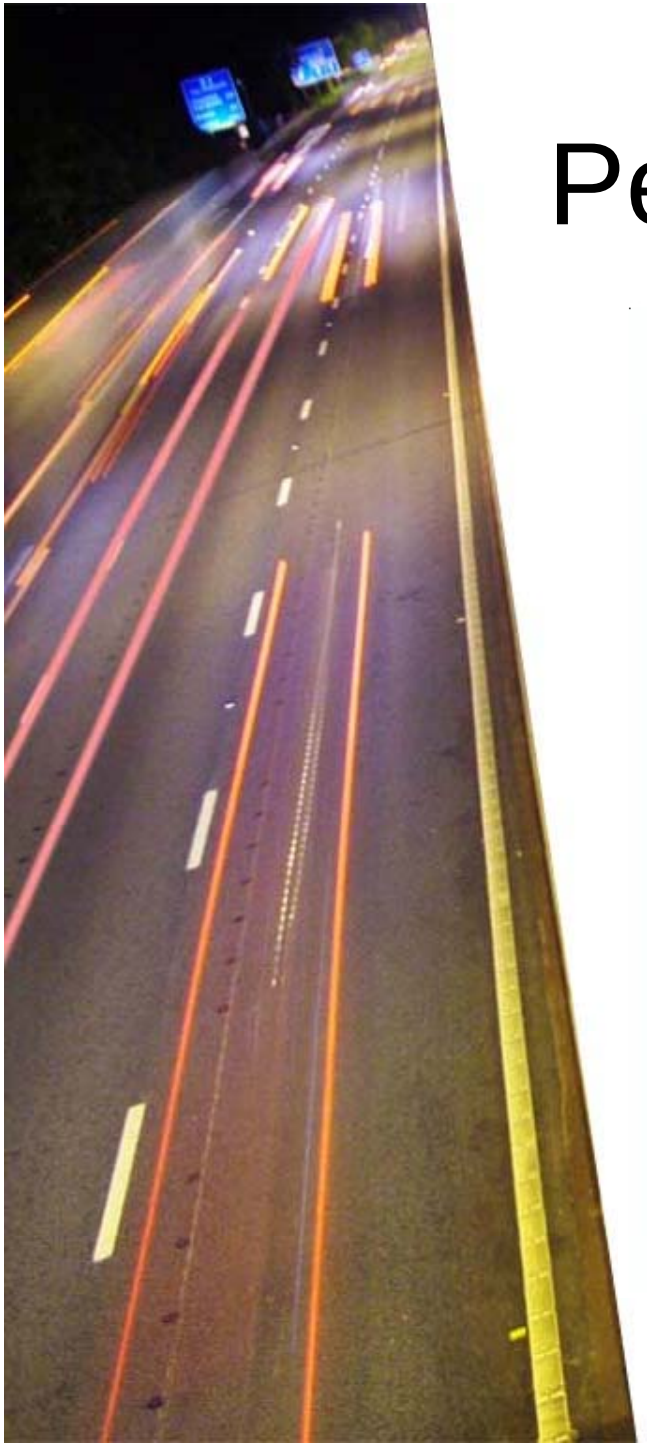
- **Justification 1 – Minimum Vehicle Volume**
  - Considers cumulative delay on all approaches
- **Justification 2 – Delay to Cross Traffic**
  - Considers minor road delay when main street volumes are high
- **Justification 3 – Volume/Delay Combination**
  - Used where justification 1 & 2 are more than 80% satisfied
- **Justification 4 – Collision Experience**
  - Requires 5 or more collisions per year over a 3 year period
  - Only collisions that may be corrected with signals are considered such as angle and turning movement types.

Greater Grand Sudbury

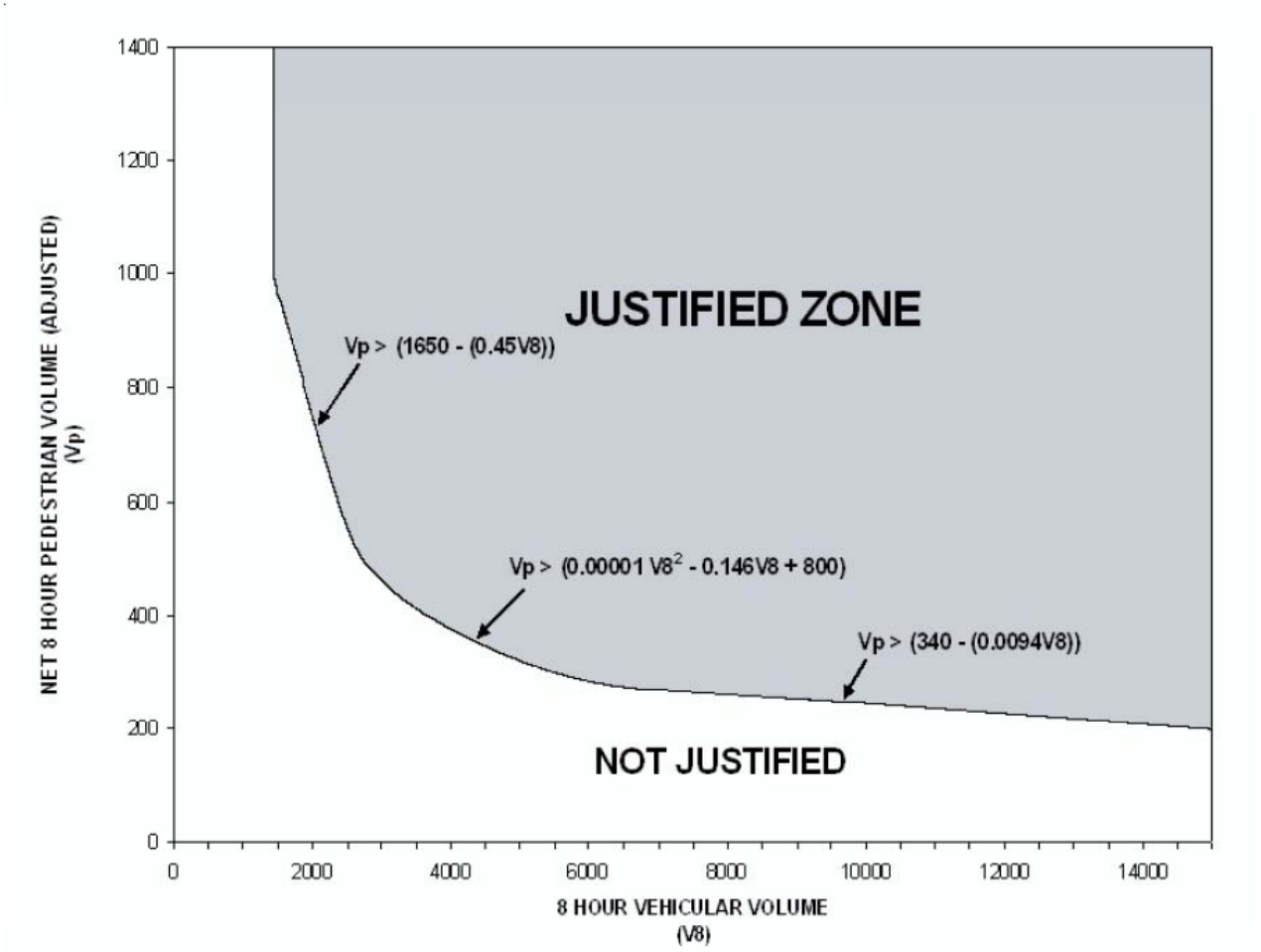


Pedestrian Justification

- Applicable where pedestrians experience excessive delay or hazard due to high traffic volumes.
- Also applies at locations with high pedestrian crossing volumes
- Justification may occur at an unsignalized intersections, or at mid-block locations.



Pedestrian Justification



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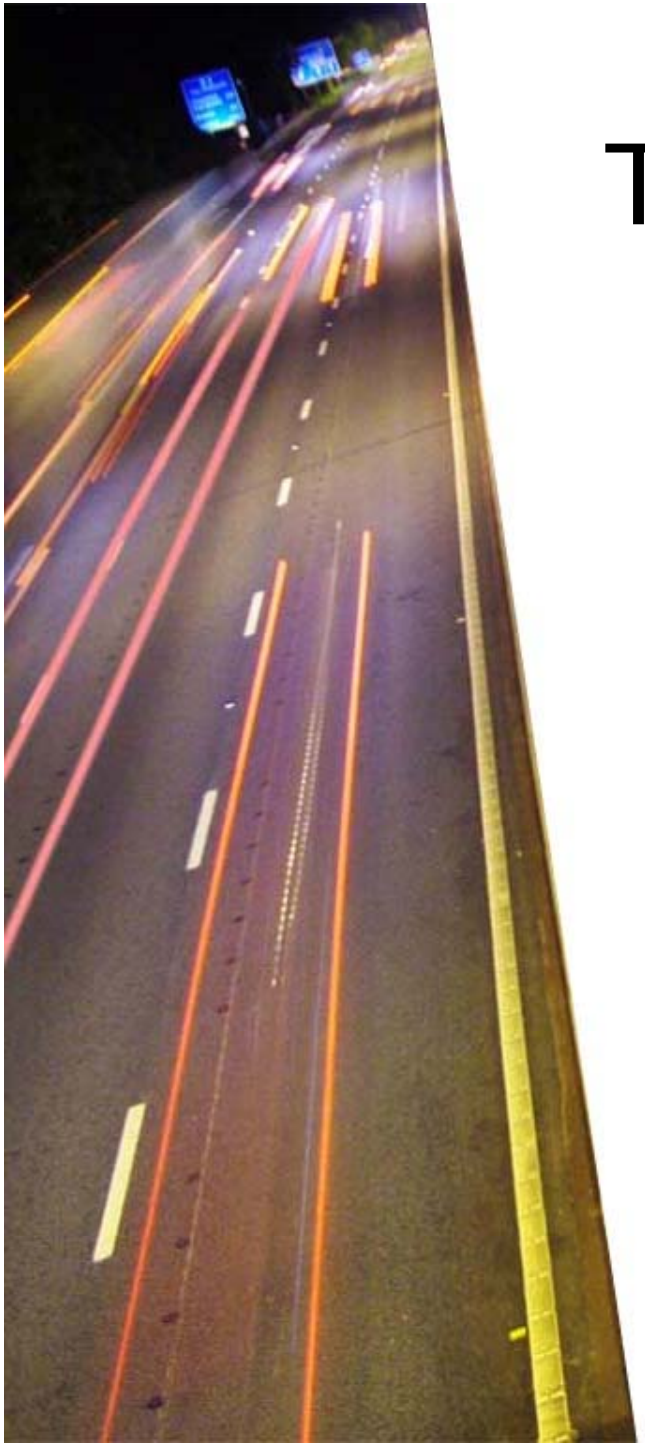

Traffic Signal System

- City operates a traffic signal system with central monitoring and control capabilities.
  - Can communicate with nearly all traffic signals over a network of copper wire, radio, telephone, and fiber optics.
- Operate progressive signal systems along all major arterials with closely spaced signals such as LaSalle Blvd; Barry Downe Rd; Paris and Notre Dame; Lorne St; Brady St; Regent St. and Elm St.

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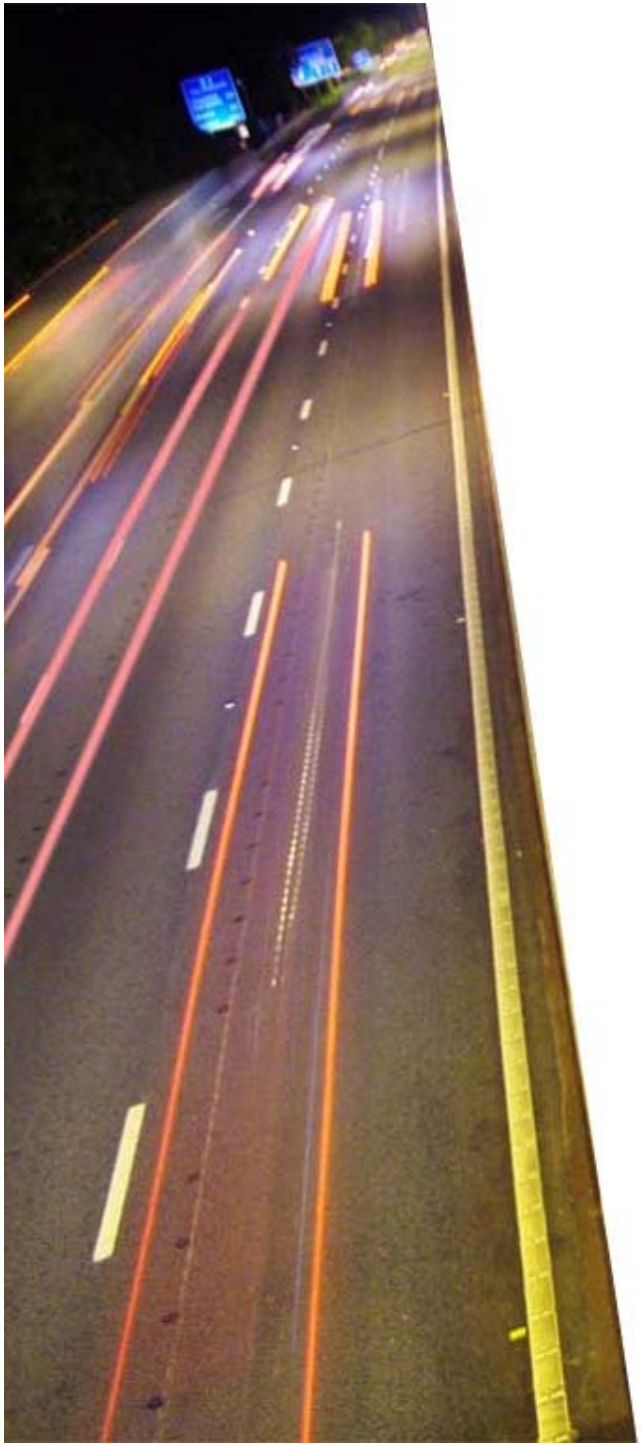
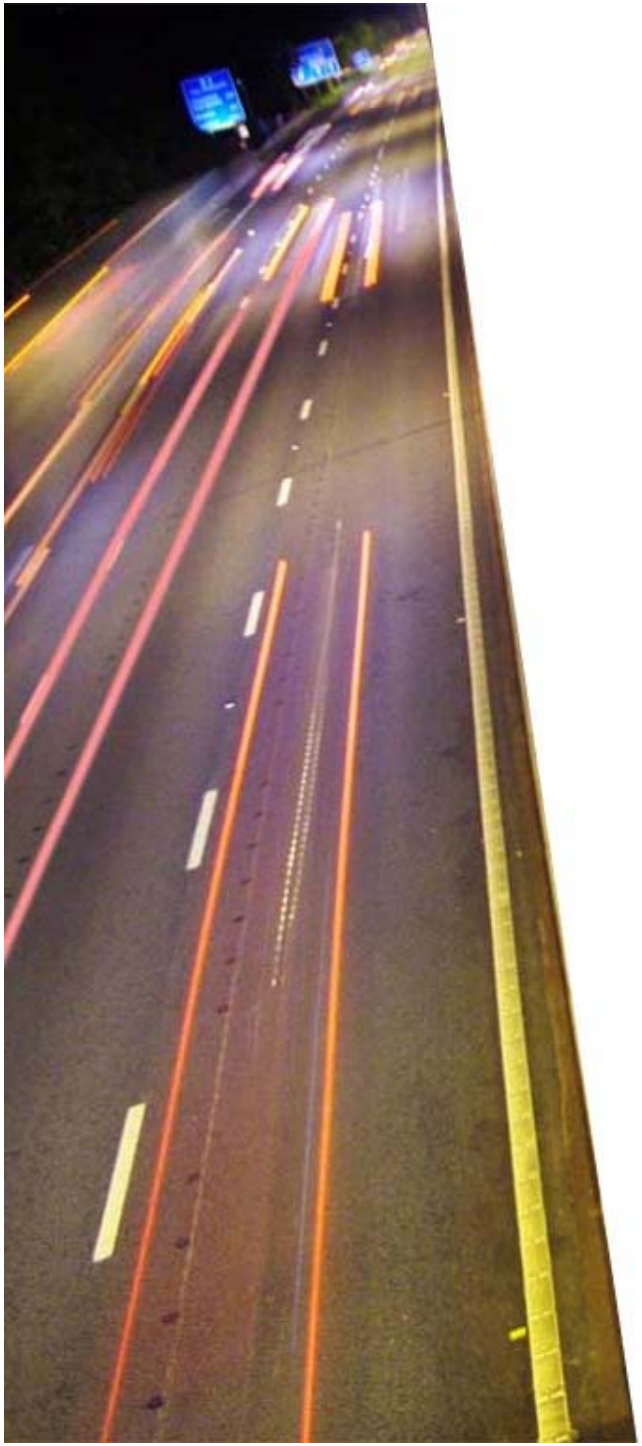
Arterial Signal System

Greater Grand Sudbury



Benefits of Signal Progression

- Reduced vehicle delay
- Number of stops reduced
- Reduced fuel consumption
- Reduced air pollution
- Improved safety
- Reduced cutting though neighbourhoods to avoid signals
- Improved emergency response



New Devices

- Pedestrian Countdown Timers
  - Installed at 79 intersections
- Accessible Pedestrian Signals
  - 12 intersections
- Uninterruptable Power Supplies
  - 62 intersections
- Video Detection
  - Operate approximately 20 cameras

Greater Grand Sudbury

APS

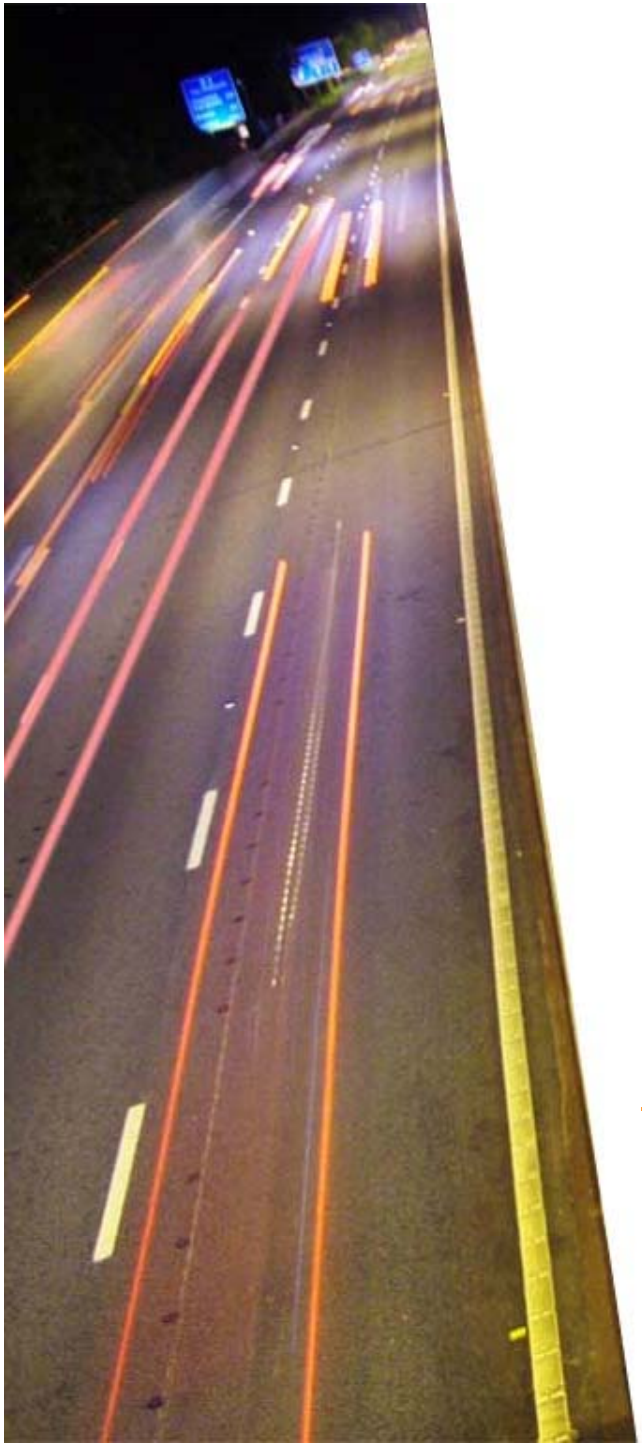
Countdown Timer

UPS and Cabinet

Greater Grand Sudbury

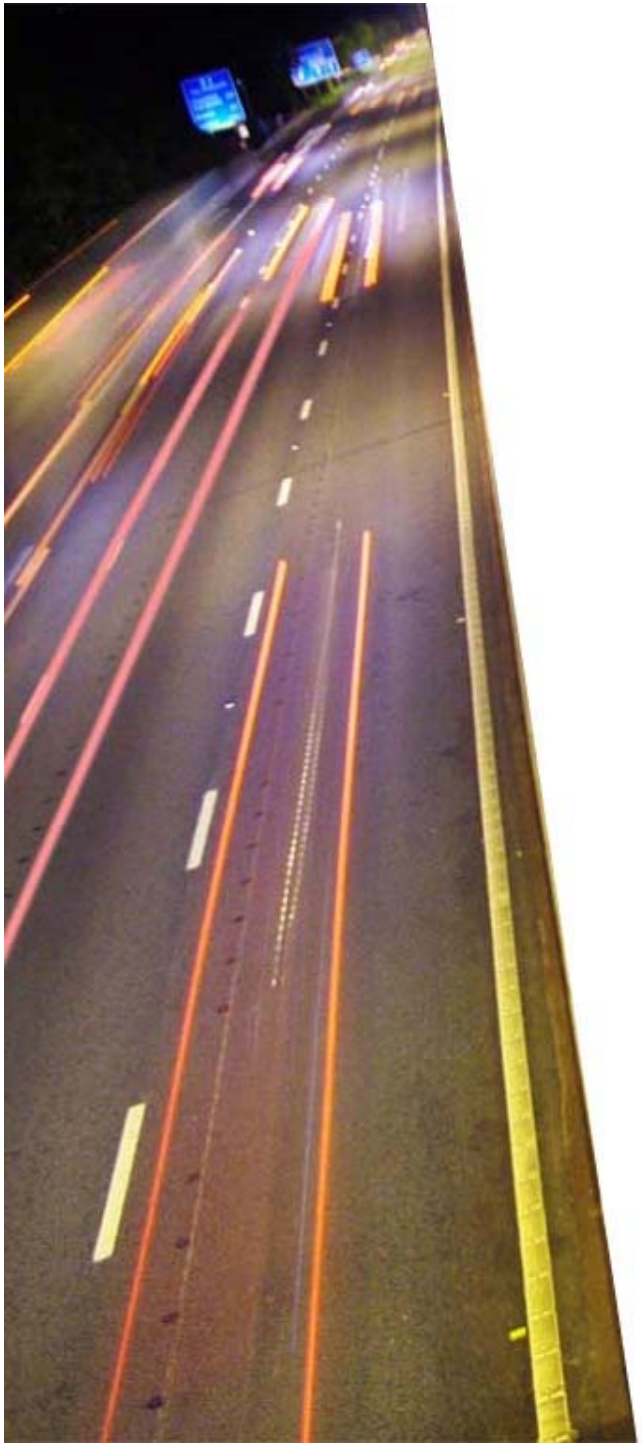
APS and Countdown Timer Demonstration

Greater Grand Sudbury



Video Detection

Live video feed from Lasalle/Notre Dame Intersection



Questions?